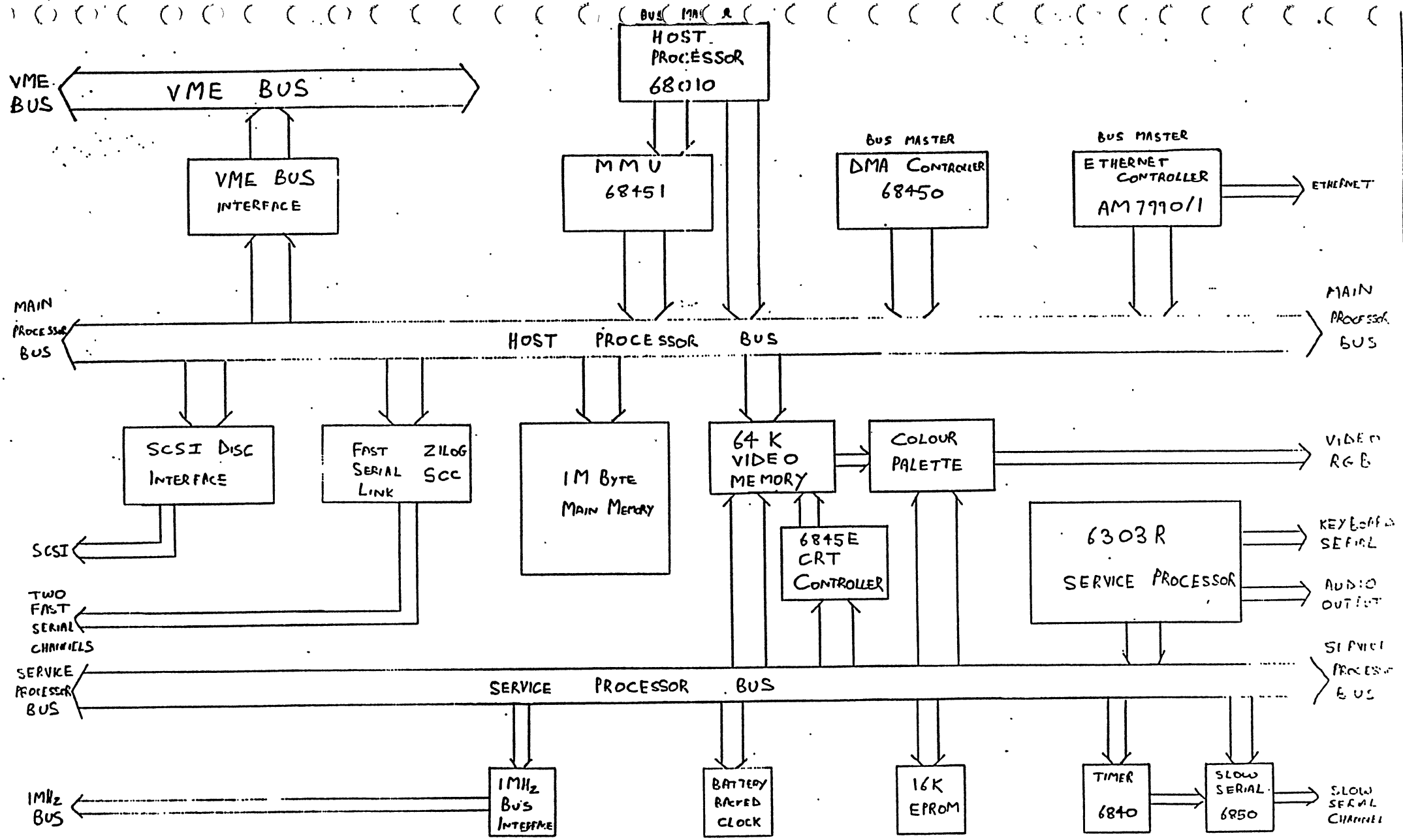


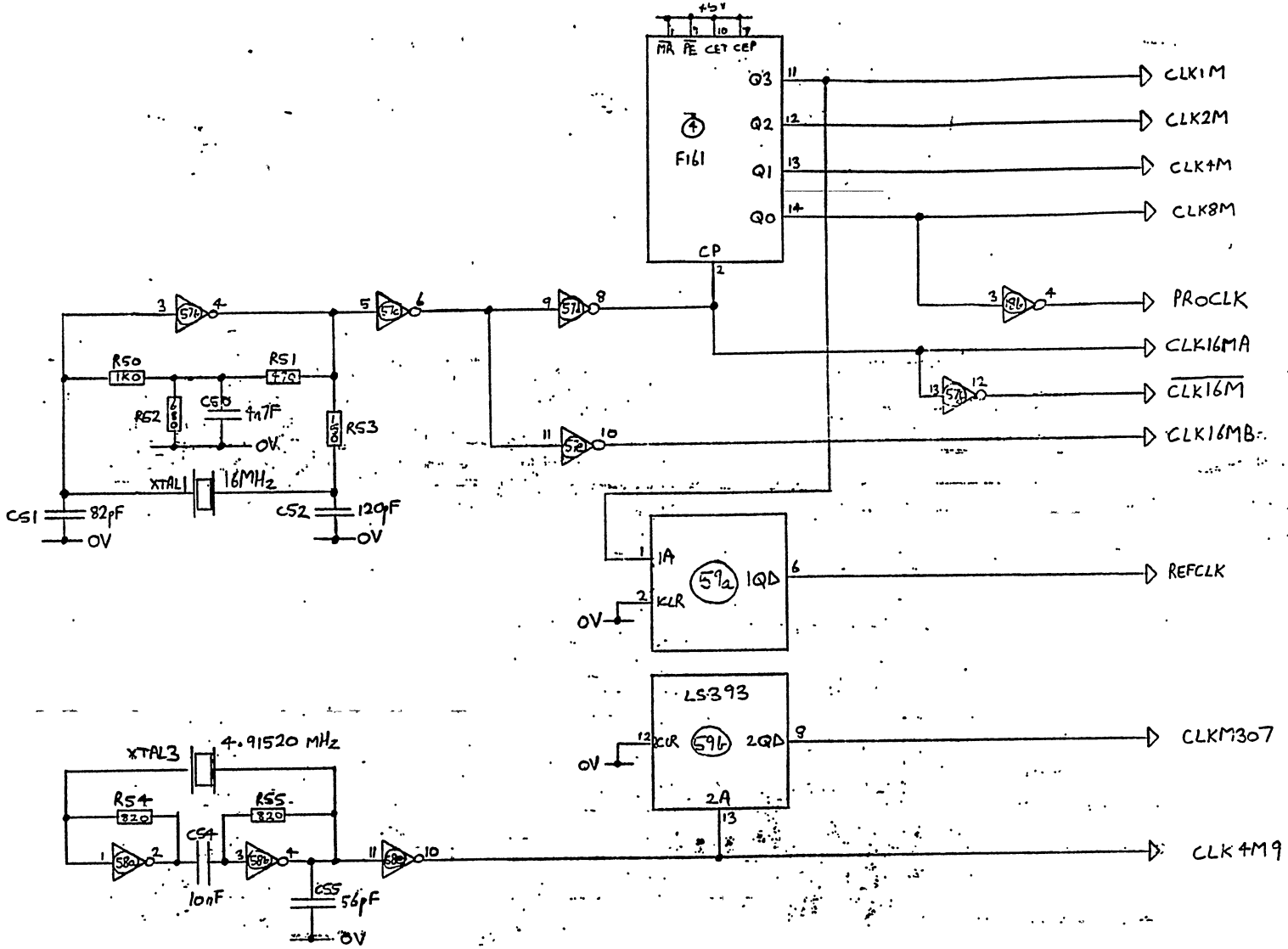
TORCH COMPUTERS

Drawn. GRAHAM CLEMOW																								
Revision	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T				
Date	2/5/84	15/5/84	20/7/84	10/12/84																				

Title: STICKLEBACK BLOCK DIAGRAM

Scale: —

GMC020584-1



TORCH COMPUTERS

Drawn	Graham Clemow																						
Revision	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T			
Date	1/10/84	2/10/84	1/11/84	1/11/84	1/11/84	4/12/85	8/1/85	21/1/85	21/1/85	1/2/85	1/2/85	1/2/85	21/1/85	1/2/85									
Initials	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC									

Title: STICKLEBACK BOARD

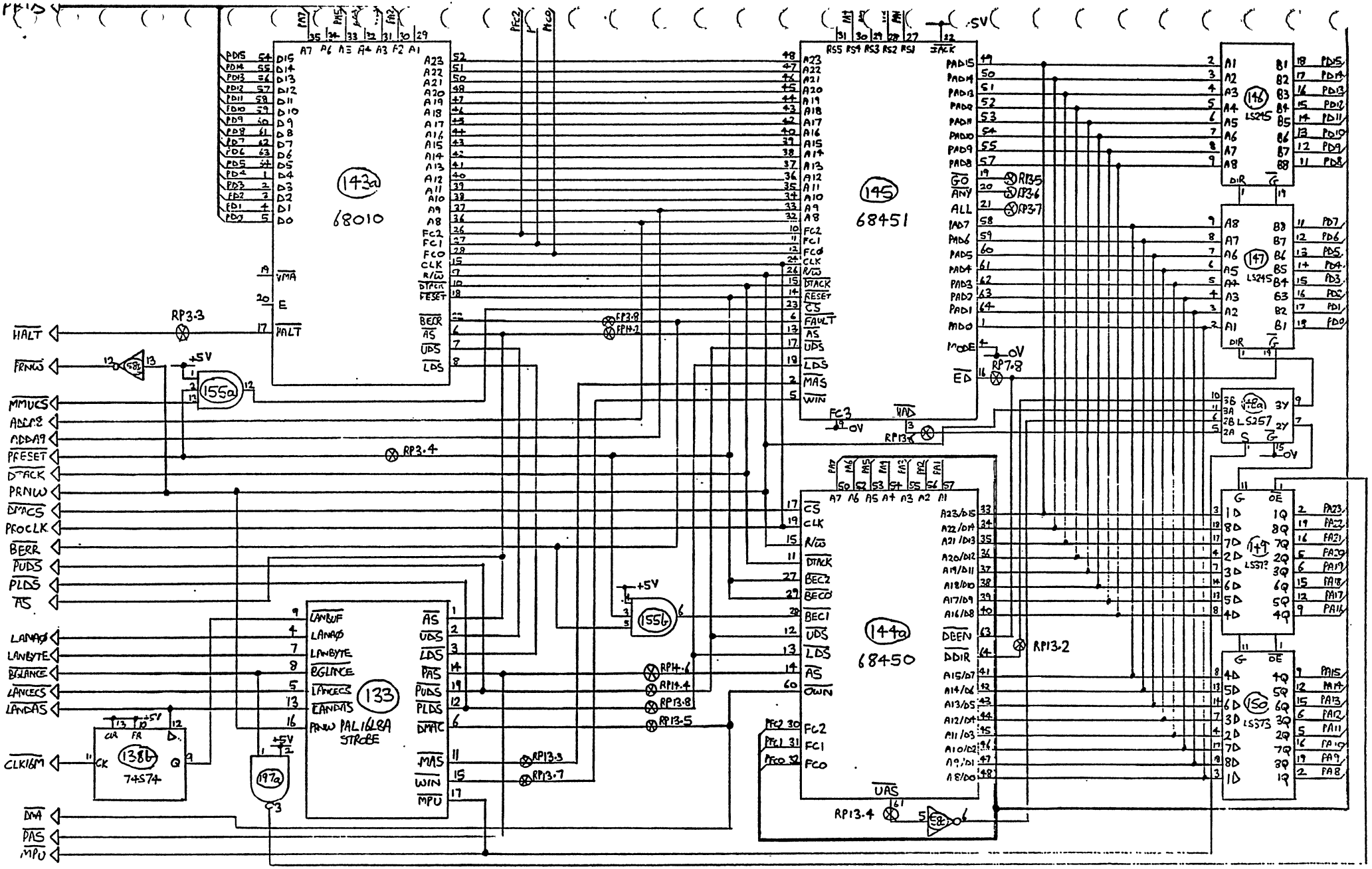
CLOCK GENERATION

Sheet 1 of 14

Scale ——

GMC 11:094

Drawing ref.



TORCH COMPUTERS

Revision	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T				
Date	11/10/84	8/11/84	20/11/84	22/11/84	25/11/84	4/12/84	5/12/84	12/12/84	5/2/85	5/2/85	5/2/85	5/2/85	28/2/85	5/3/85										
Initials	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC										

Drawn Graham Clemow

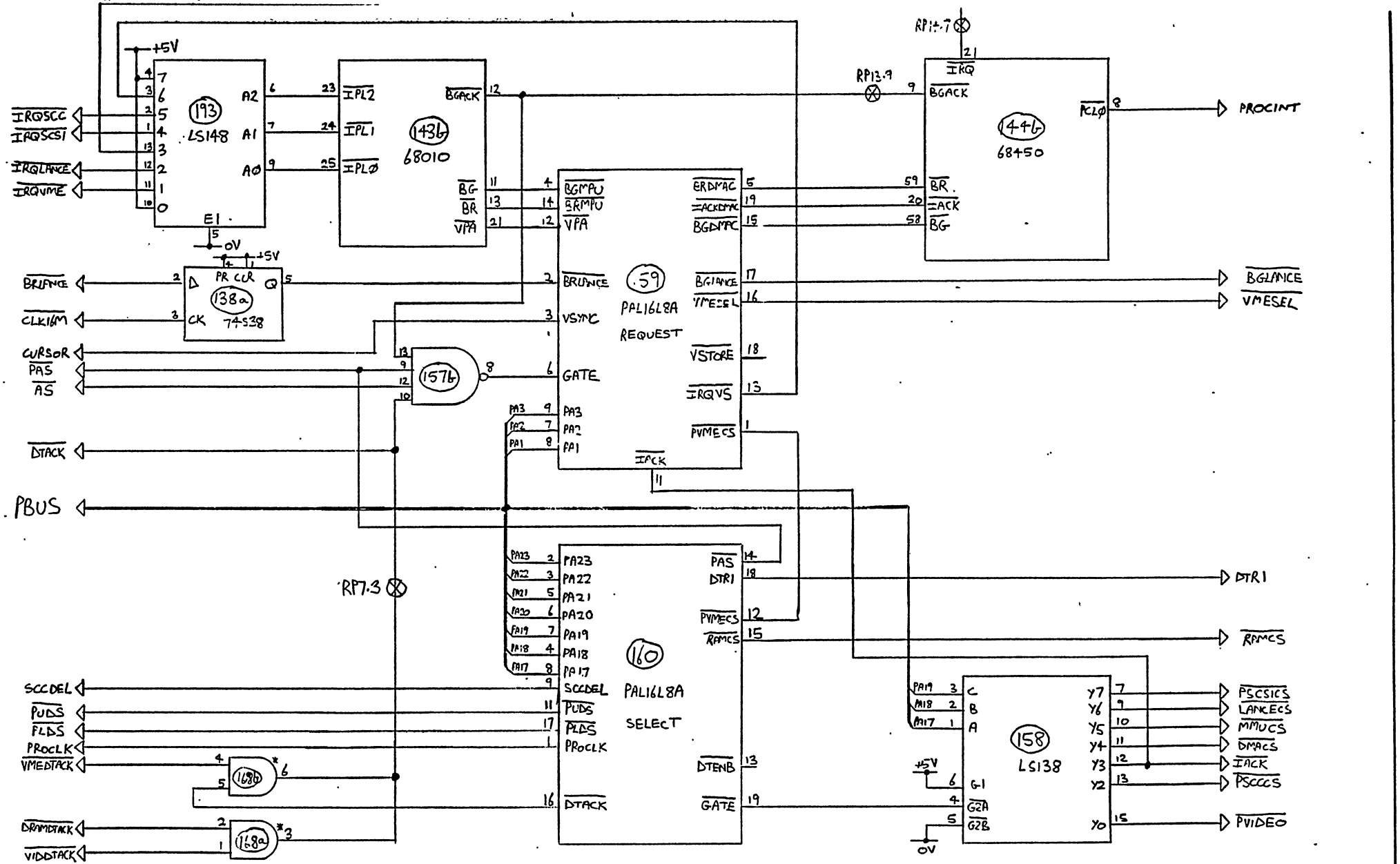
Title: Stickleback Board

Host Bus Masters

Sheet 2 of 14

Scale: ——

Drawing ref.



TORCH COMPUTERS

Revision	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T				
Date	11/1/84	8/11/84	30/11/84	22/1/185	25/1/185	4/2/185	15/2/185	12/3/185	10/5/185	7/8/185	24/9/185	11/10/85	28/11/85	6/12/85										
Initials	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC										

Drawn Graham Clemow

Title STICKLEBACK BOARD

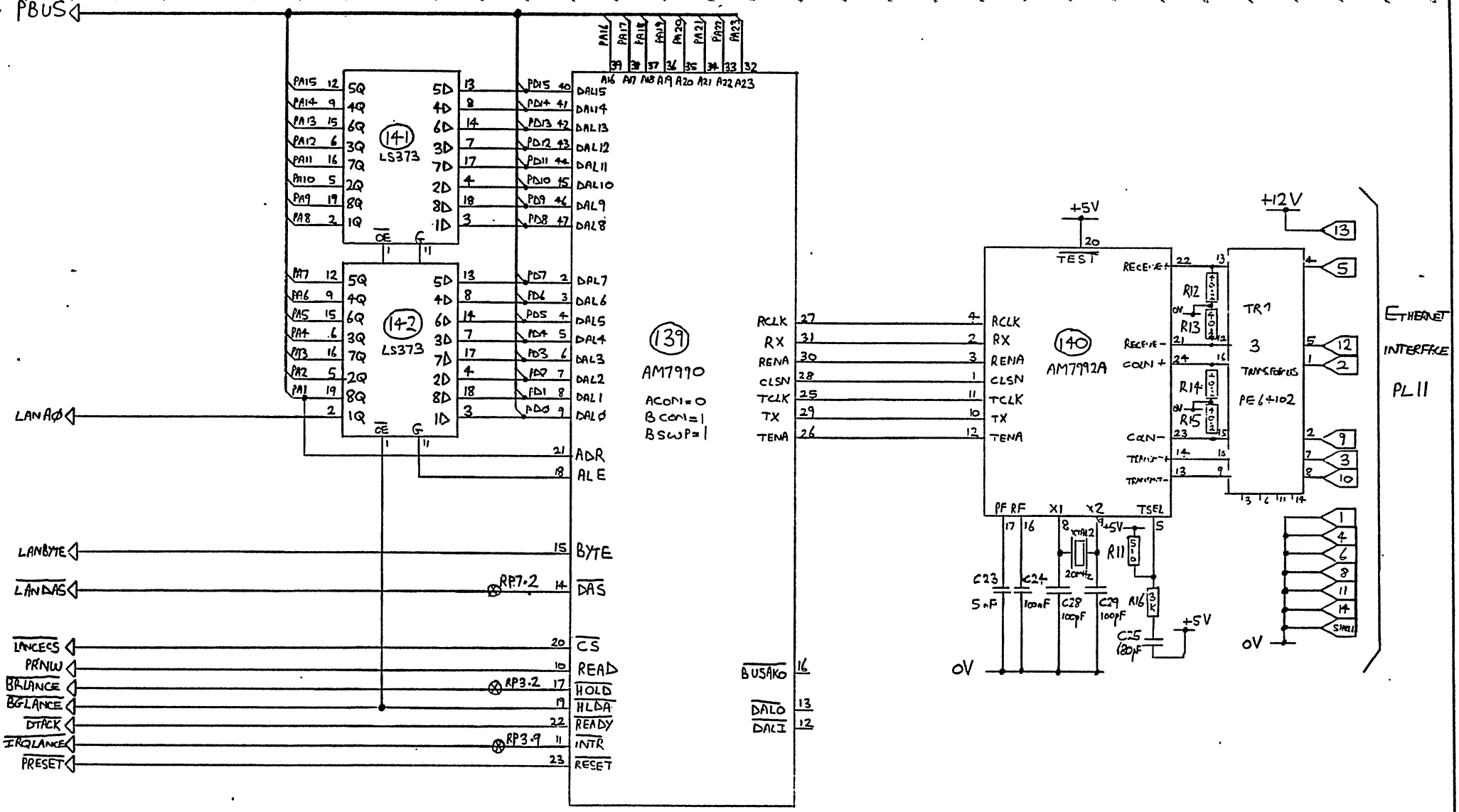
HOST MASTER CONTROL

Sheet 6 of 14

Scale ——

GMC 111084

Drawing ref.



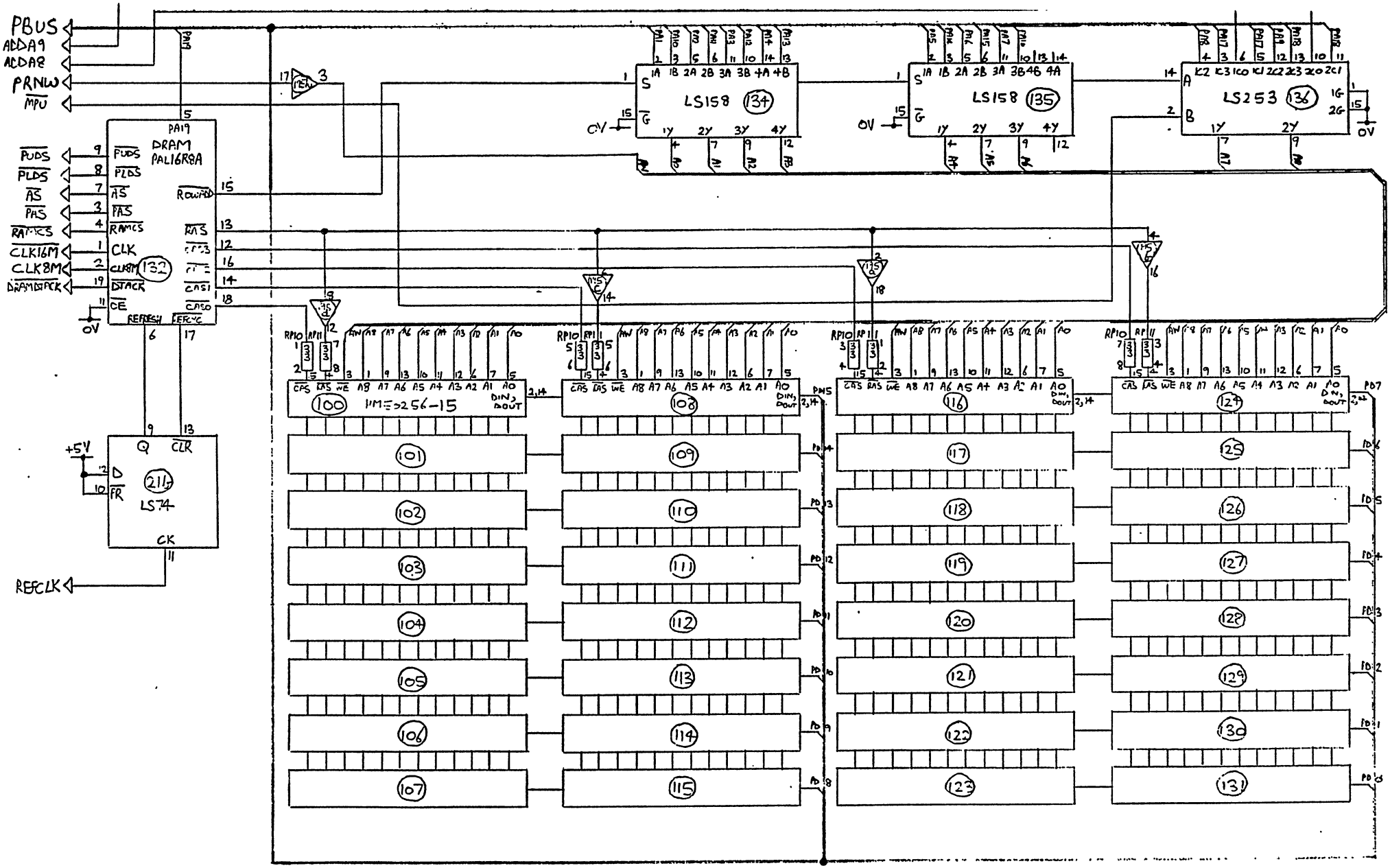
TORCH COMPUTERS

Drawn	Graeme Clarke																					
Revision	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T		
Date	4th Jan 84	9th Jan 84	5th Mar 85	25/3/85	1st Apr 85	15/4/85	12/5/85	12/8/85	20/8/85	29/8/85	6/9/85	11/9/85	28/11/85	4/12/85								
Initials	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC								

Title: STICKLEBACK ECARD
E-HERNET

Sheet 4 of 14
Scale —

GMC 11108+
Drawing ref.



TORCH COMPUTERS

Drawn: Graham Clemow																			
Revision	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Date	31/10/84	9/11/84	30/11/84	22/11/85	25/11/85	4/12/85	15/12/85	12/12/85	10/5/85	7/8/85	2/4/85	11/6/85	28/11/85	6/12/85						
Initials	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC						

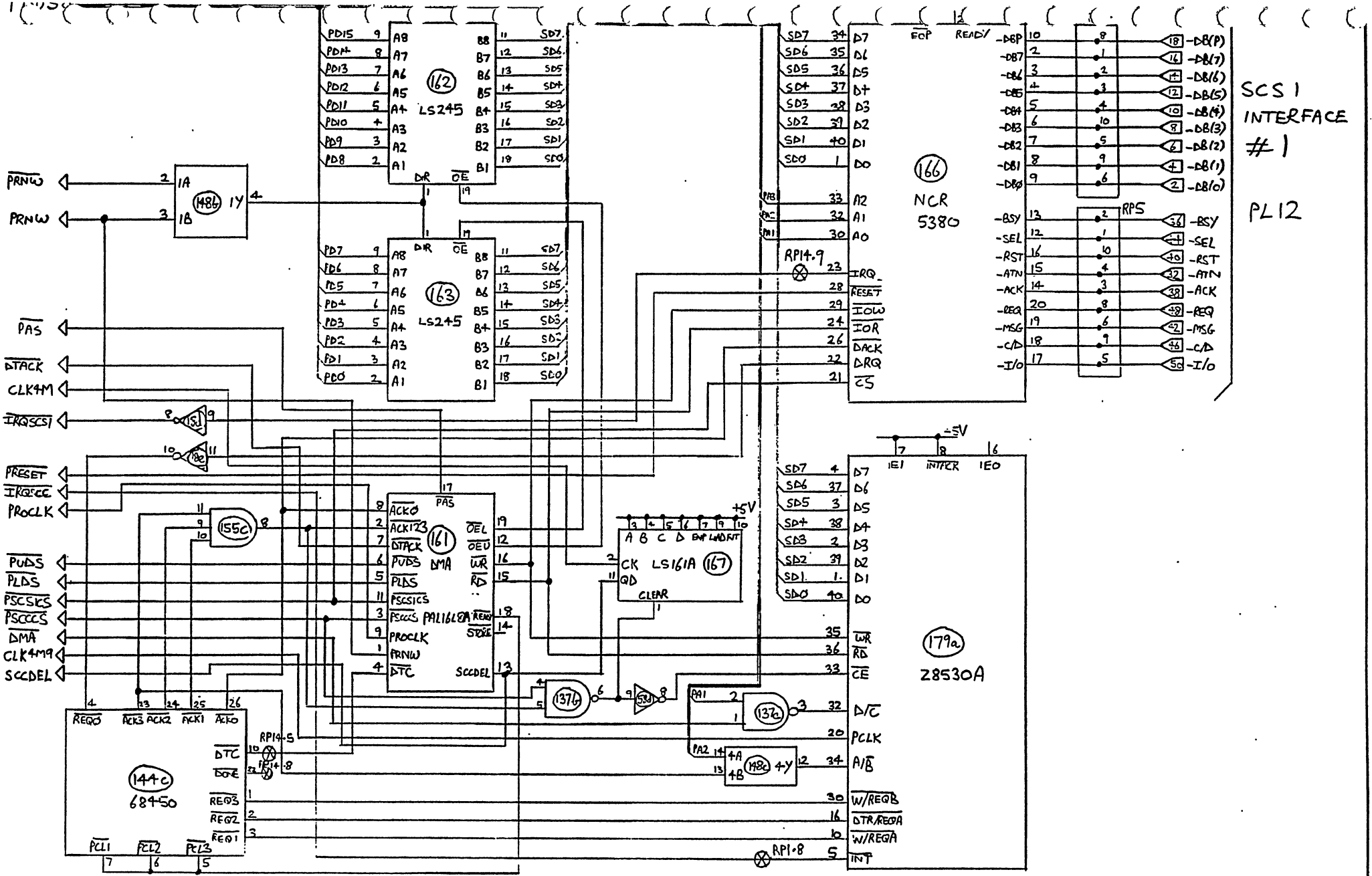
Title: Stickleback Board

Dynamic Memory

Sheet 5 of 14

Scale:

Drawing ref.



TORCH COMPUTERS

Revision	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T		
Date	11/16/84	9/11/84	30/11/84	22/1/85	25/1/85	4/2/85	15/4/85	12/5/85	28/5/85	5/8/85	24/9/85	11/10/85	28/11/85	6/1/86								
Initials	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC								

Drawn Graham Clemow

Title: STICKLEBACK ECAFD

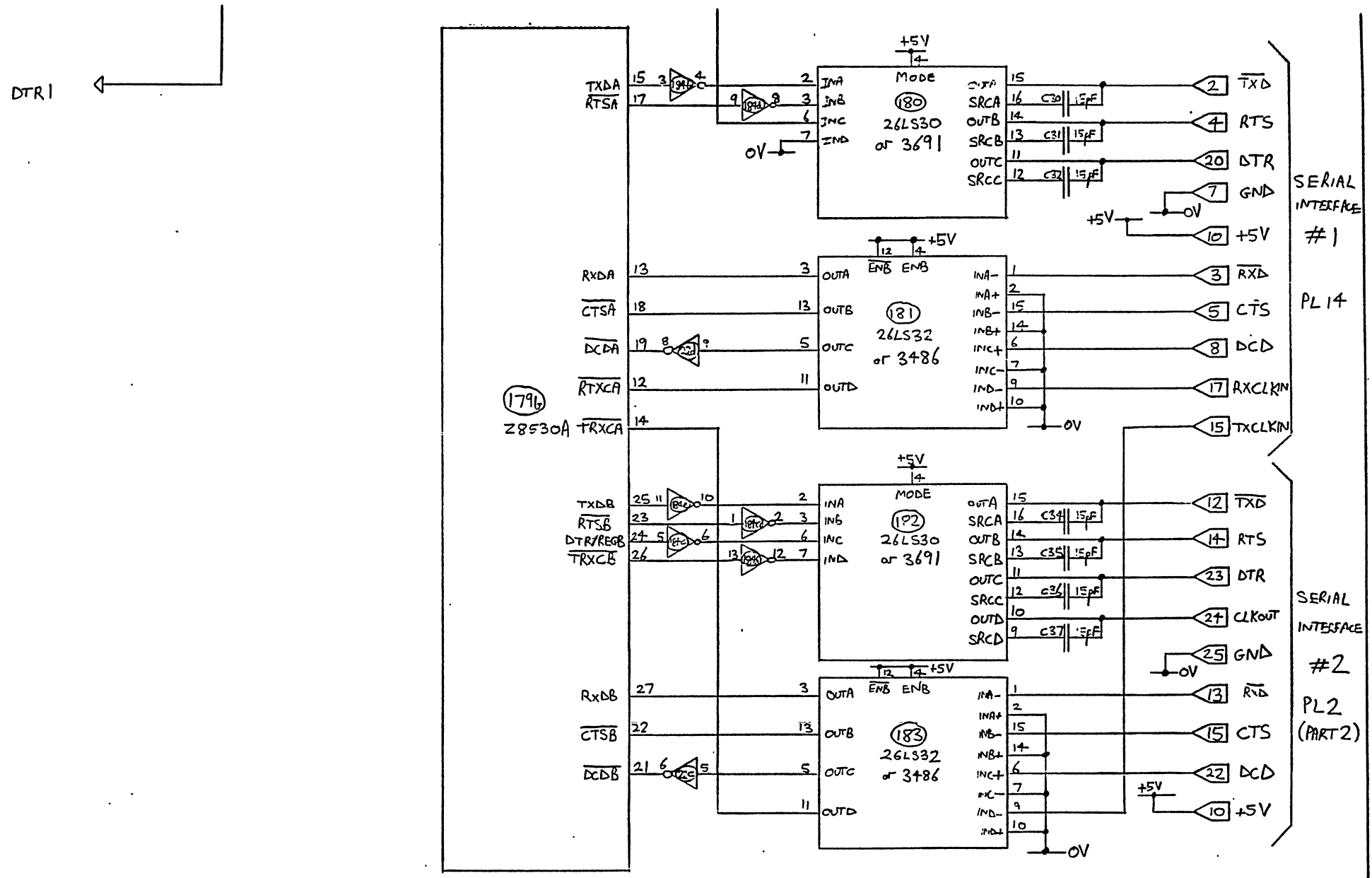
DMA INTERFACE

Sheet 6 of 14

Scale —

EMC 11082+

Drawing ref.



TORCH COMPUTERS

Revision	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Date																				
Initials																				

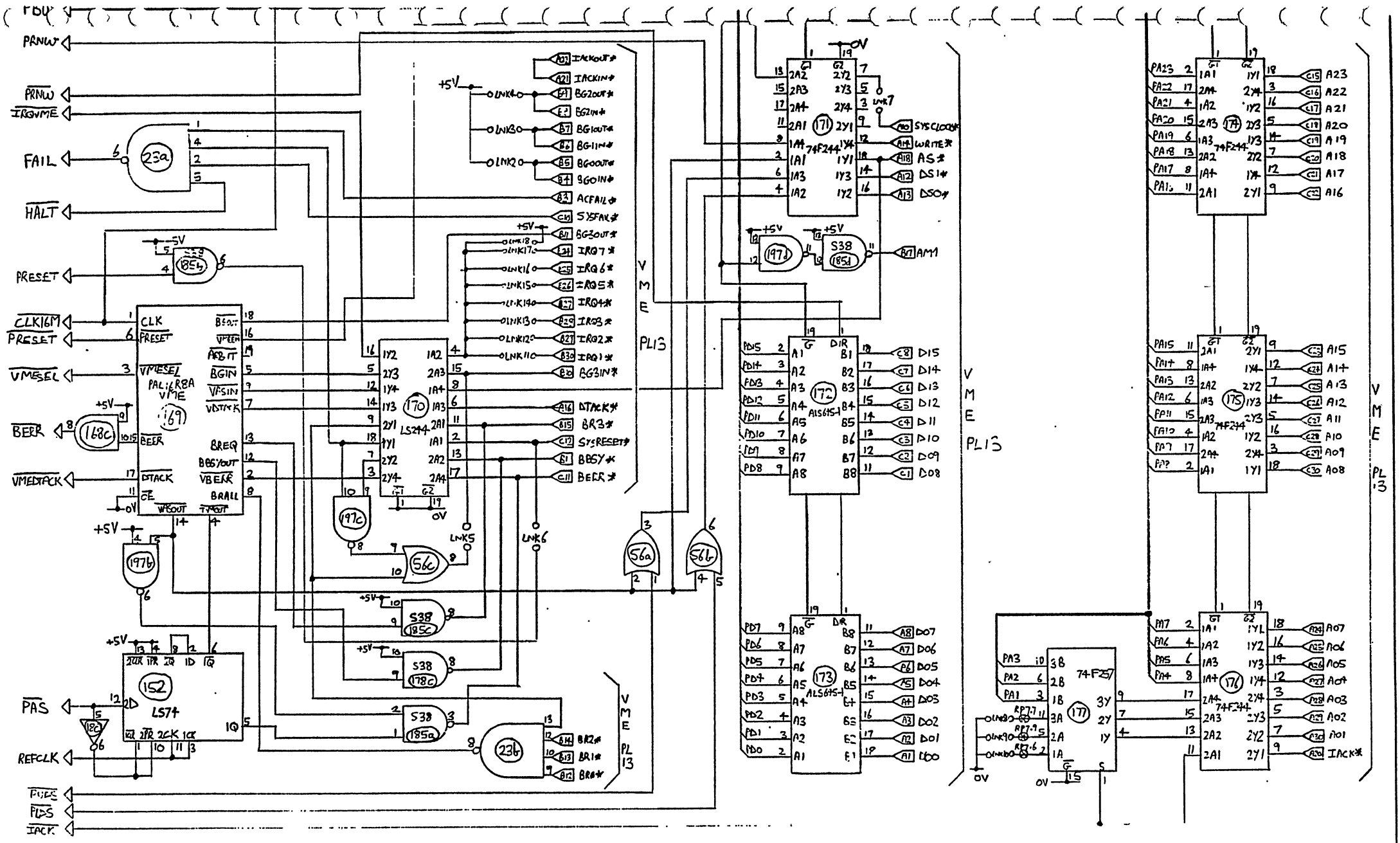
Title: STICKLEBACK BOARD
HOST SERIAL IO

Sheet 7 OF 14

Scale:

GMC 111084

Drawing ref.



TORCH COMPUTERS

Revision	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Date	11/10/84	4/11/84	20/11/84	23/11/84	25/11/84	4/12/84	15/12/84	12/3/85	10/5/85	18/5/85	24/5/85	11/10/85	28/11/85	9/12/85						
Initials	JMC	JMC	JMC	JMC	JMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC						

DRAWN: GRAHAM CLEMOW

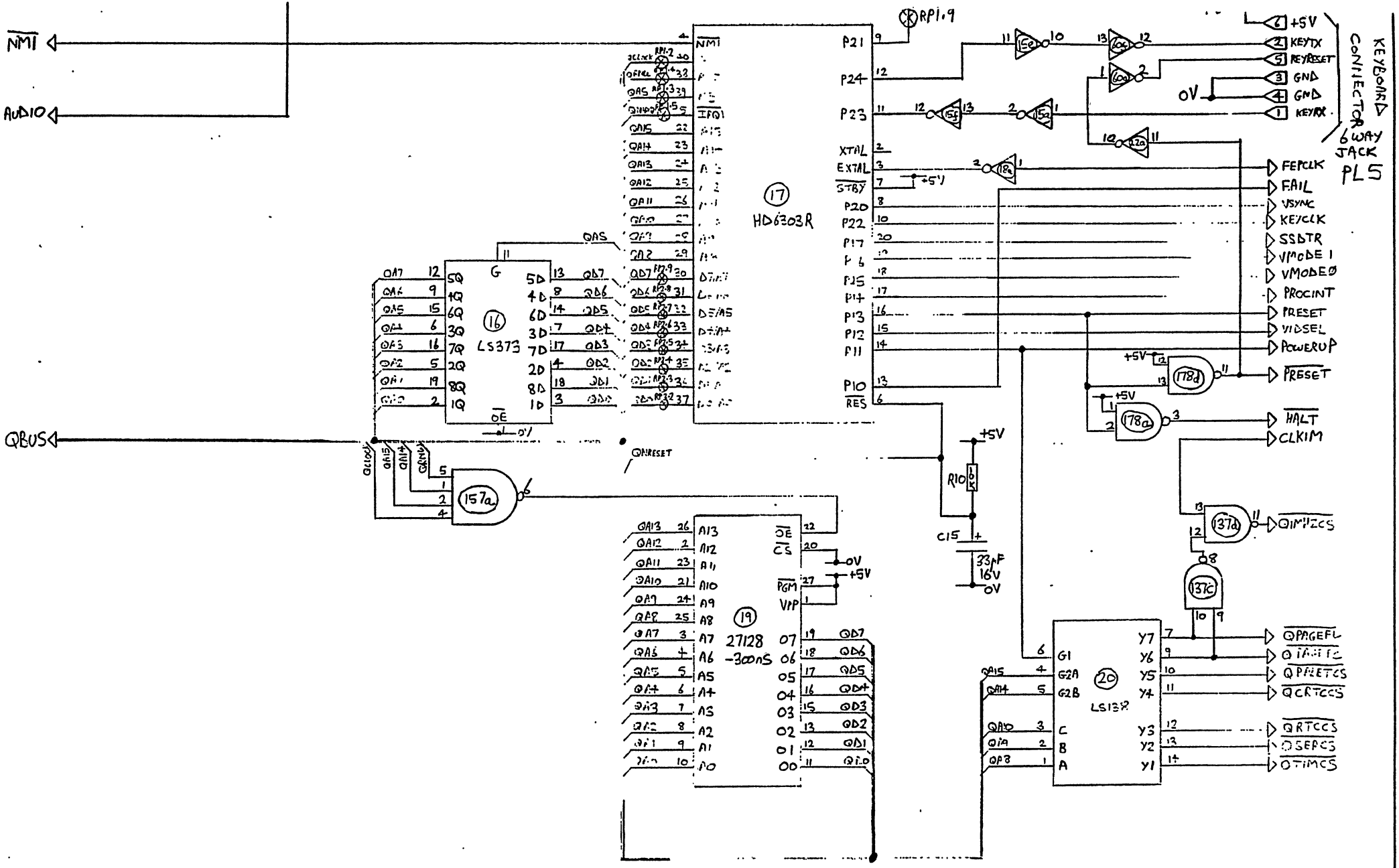
Title: STICKLEBACK BOARD

VME INTERFACE

SHEET 8 OF 14

Scale: —

Drawing ref.



TORCH COMPUTERS

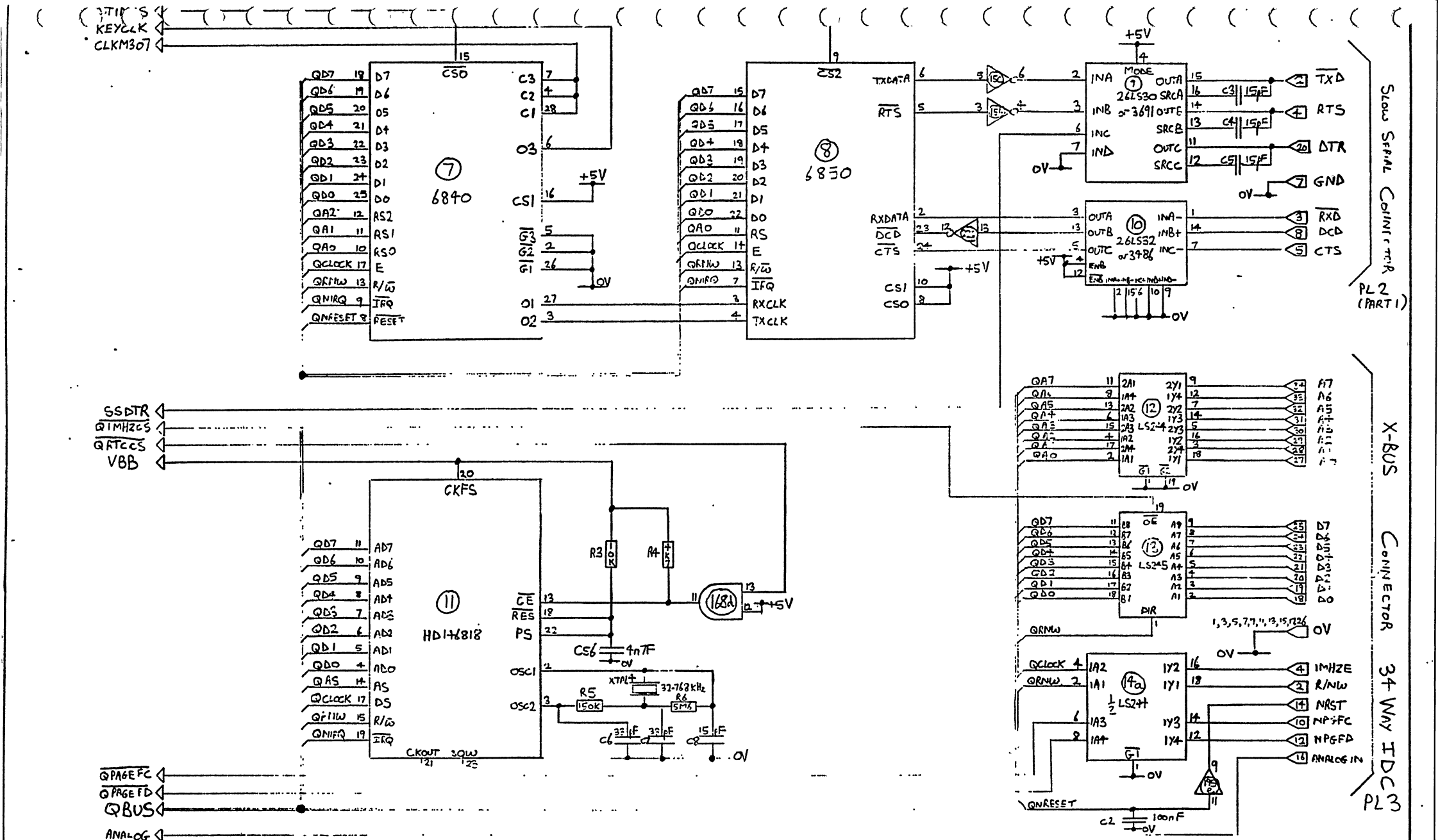
Revision	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Date	11/10/84	8/11/84	30/11/84	22/1/85	25/1/85	4/2/85	15/2/85	12/3/85	10/5/85	7/8/85	24/9/85	11/10/85	28/11/85	5/12/85						
Initials	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC						

Title: STICKLEBACK BOARD SERVICE PROCESSOR

Sht 9 of 14

Scale —

Drawing ref.



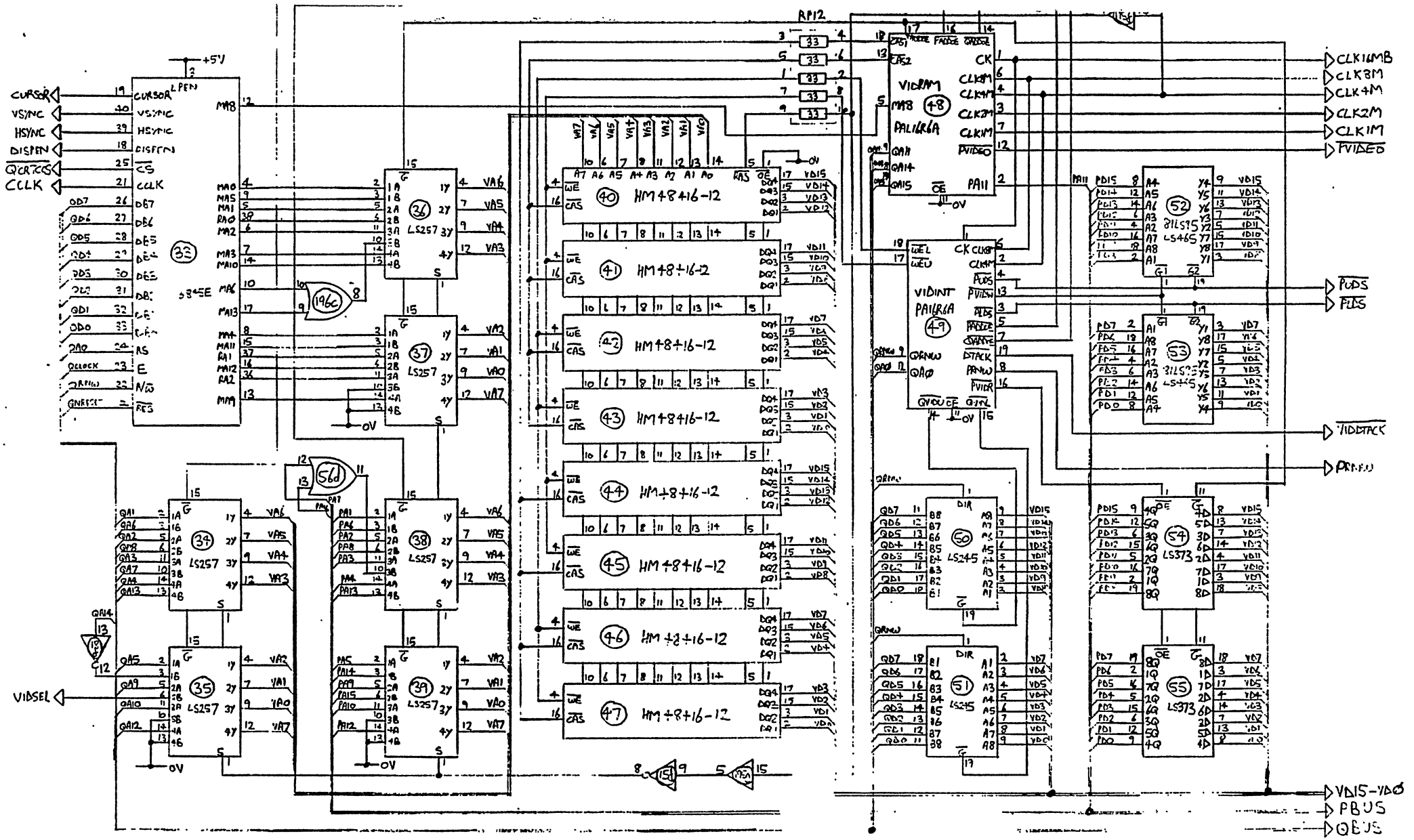
TORCH COMPUTERS

Revision	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Date																				
Initials																				

Title STICKLEBACK BOARD
SERVICE BUS PERIPHERALS

Sheet 10 OF 14
Scale —

GMC 111084
Drawing ref.



TORCH COMPUTERS

Revision	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Date	11/10/84	8/11/84	30/11/84	22/11/84	25/11/84	4/12/84	5/12/84	12/12/84	14/12/84											
Initials	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC											

Drawn: Graham Clifton

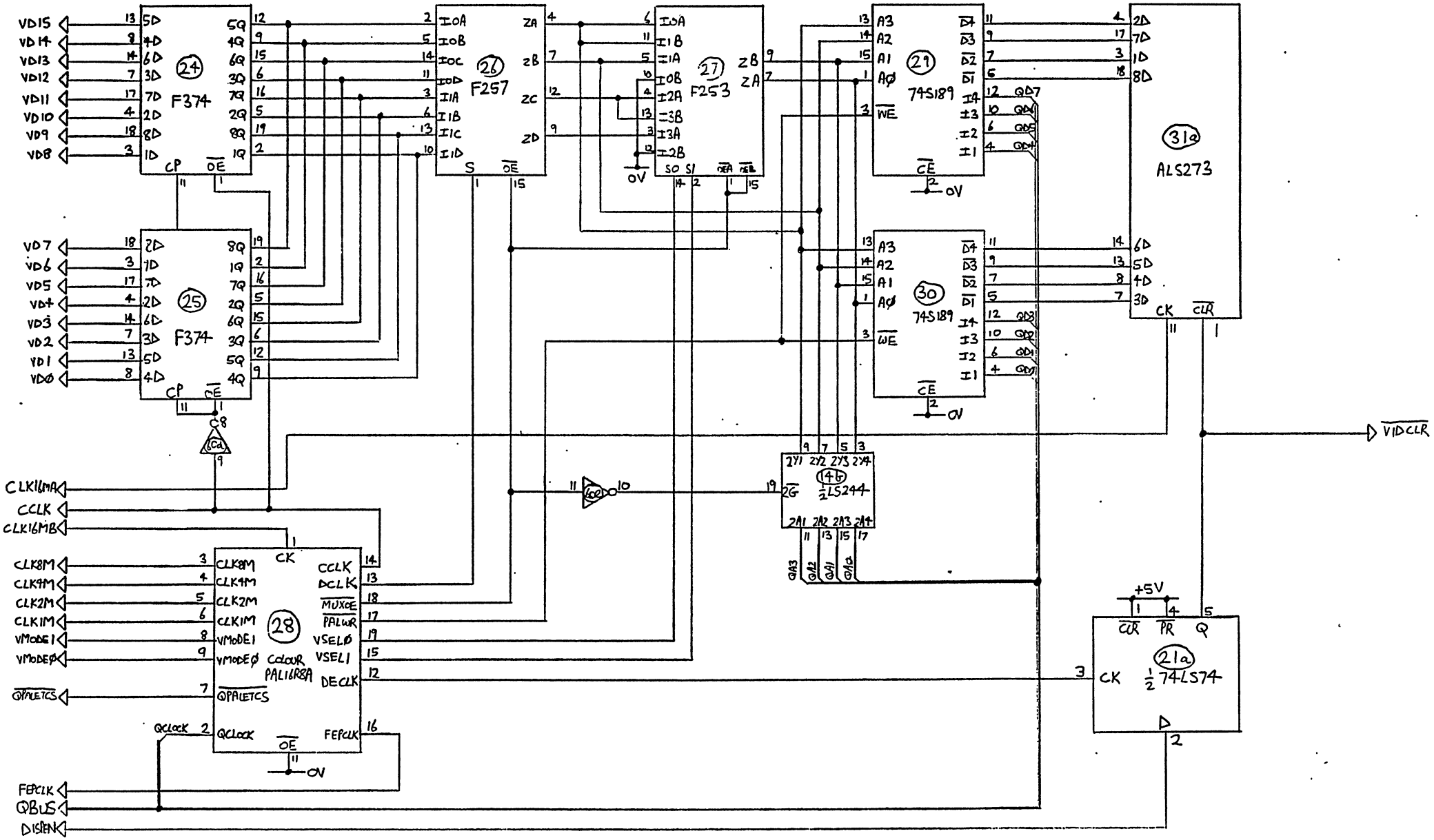
Title: Sticklebag Board

Video Memory

Sheet 11 of 14

Scale

Drawing ref.



TORCH COMPUTERS

Revision	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	
Date	11/10/84	8/1/84	30/11/84	22/11/84	25/1/85	4/2/85	15/2/85	12/3/85	10/5/85	7/8/85	24/9/85	11/10/85	28/11/85	6/12/85							
Initials	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC							

DRAWN : GRAHAM CLEMOW

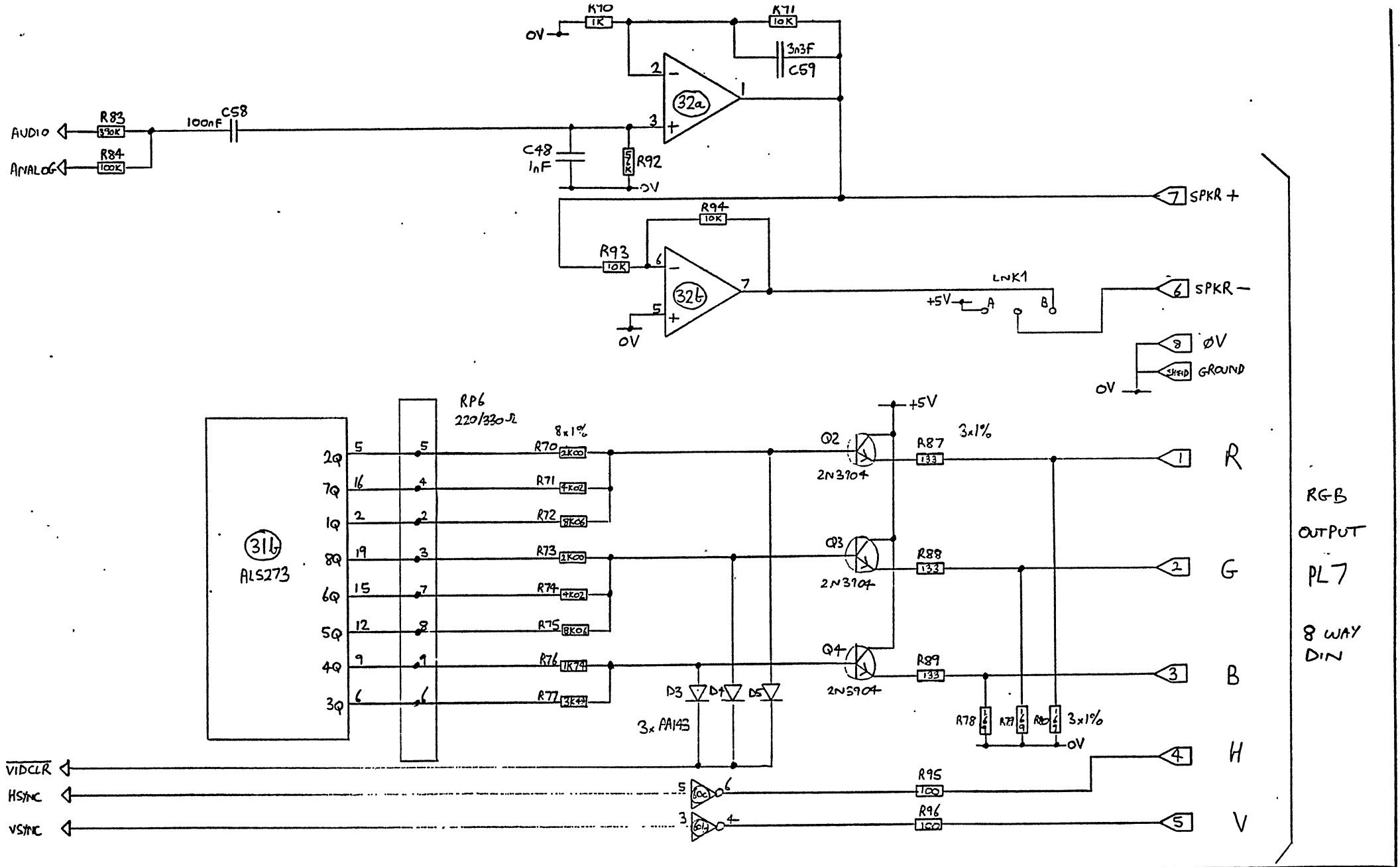
Title: STICKLEBACK BOARD
VIDEO PALETTE

SHEET 12 OF 14

Scale: —

GMC HB84

Drawing ref.



TORCH COMPUTERS

Revision	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Date	11/10/84	2/11/84	25/11/84		25/12/84	4/2/85	15/2/85	12/3/85	10/4/85	7/5/85	24/5/85		28/6/85	11/7/85						
Initials	GMC	GMC	GMC		GMC	GMC	GMC	GMC	GMC	GMC	GMC		GMC	GMC						

Title: STICKLEBACK BOARD
VIDEO & AUDIO OUTPUT

Sheet 13 of 14
Scale

GMC 111084
Drawing ref.

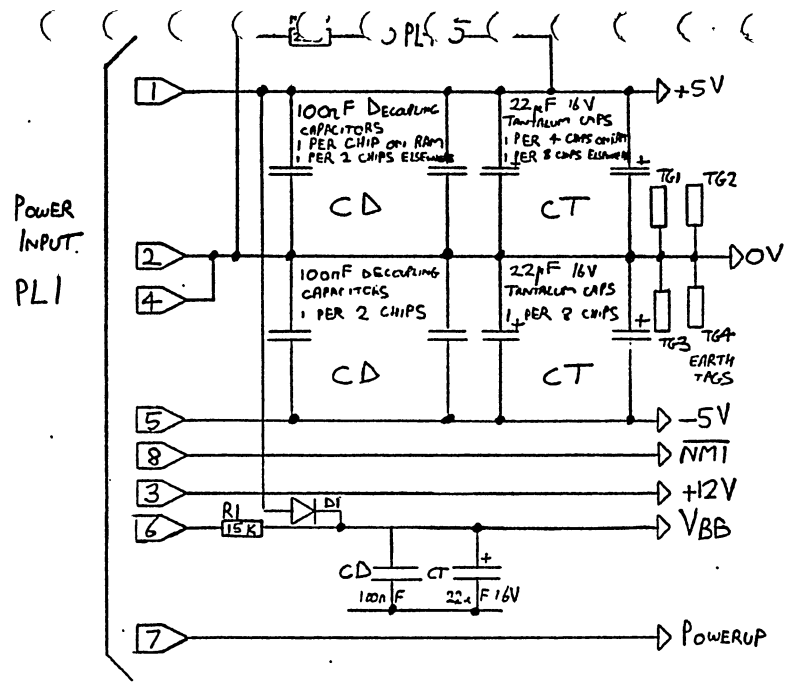
IC	TYPE	P	-5	GND	IC	TYPE	PIN	+5	GND
1	—				52	81LS95/74LS165	20	20	10
2	—				53	81LS95/74LS169	20	20	10
3	—				54	74LS373	20	20	10
4	74F161	16	16	8	55	74LS373	20	20	10
5	—				56	74LS32	14	14	7
6	—				57	74F04	14	14	7
7	6840	28	14	1	58	74LS04	14	14	7
8	6850	24	12	1	59	74LS393	14	14	7
9	26LS30	16	1	5	60	74F04	14	14	7
10	26LS32	16	16	8	100-131	HM50256-15	16	8	16
11	HD1-6818	24	—	12	132	PAL16R8A	20	20	10
12	74LS244	20	20	10	133	PAL16L8A	20	20	10
13	74LS245	20	20	10	134	74F158	16	16	8
14	74LS244	20	20	10	135	74F158	16	16	8
15	74LS04	14	14	7	136	74F253	16	16	8
16	74LS373	20	20	10	137	74LS00	14	14	7
17	HD6303R	40	21	1	138	74S74	14	14	7
18	74HCT04	14	14	7	139	AM7990	48	48	1,24
19	27128-300	28	28	14	140	AM7992A	24	18,19	6,7,15
20	74LS138	16	16	8	141	74LS373	20	20	10
21	74LS74	14	14	7	142	74LS373	20	20	10
22	74LS04	14	14	7	143	68010-8	64	14,49	16,53
23	74LS13	14	14	7	144	68450-8	64	18,51	16,49
24	74F374	20	20	10	145	68451-8	64	25,56	8,41
25	74F374	20	20	10	146	74LS245	20	20	10
26	74F257	16	16	8	147	74LS245	20	20	10
27	74F253	16	16	8	148	74LS257	16	16	8
28	PAL16R8A	20	20	10	149	74LS373	20	20	10
29	74S189	16	16	8	150	74LS373	20	20	10
30	74S189	16	16	8	151	—			
31	74ALS273	20	20	10	152	74LS74	14	14	7
32	1458	8	8	5	153	—			
33	6845E	40	20	1	154	—			
34	74LS257	16	16	8	155	74F08	14	14	7
35	74LS257	16	16	8	156	—			
36	74LS257	16	16	8	157	74LS13	14	14	7
37	74LS257	16	16	8	158	74LS138	16	16	8
38	74LS257	16	16	8	159	PAL16L8A	20	20	10
39	74LS257	16	16	8	160	PAL16L8A	20	20	10
40-47	HM48416-12	18	9	18	161	PAL16L8A	20	20	10
48	PAL16R6A	20	20	10	162	74LS245	20	20	10
49	PAL16R6A	20	20	10	163	74LS245	20	20	10
50	74LS245	20	20	10	164	—			
51	74LS245	20	20	10	165	—			

IC	TYPE	PIN	+5V	ND
166	NCR5380	40	31	11
167	74LS161A	16	16	8
168	74LS09	14	14	7
169	PAL16R8A	20	20	10
170	74F244	20	20	10
171	74F244	20	20	10
172	74F245	20	20	10
173	74F245	20	20	10
174	74F244	20	20	10
175	74F244	20	20	10
176	74F244	20	20	10
177	74F257	16	16	8
178	74S38	14	14	7
179	Z8530	40	9	31
180	26LS30	16	1	5
181	26LS32	16	16	8
182	26LS30	16	1	5
183	26LS32	16	16	8
184	74LS04	14	14	7
185	74S38	14	14	7
193	74LS148	16	16	8
195	74F244	20	20	1,10,19
196	74LS32	14	14	7
197	74LS00	14	14	7

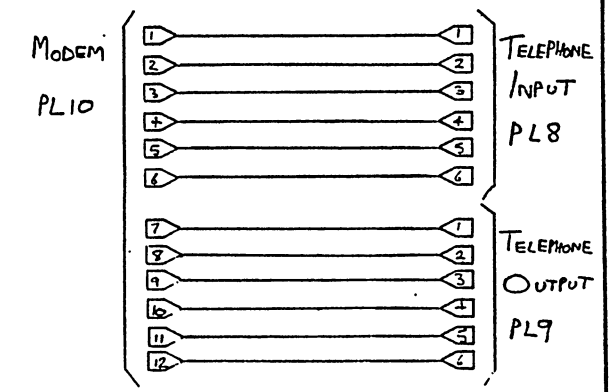
RP1	4K7 -8 common	9	1	—
RP2	4K7 -8 common	9	1	—
RP3	4K7 -8 common	9	1	—
RP4	22/330 -12 common	14	14	7
RP5	220/330 -12 common	14	14	7
RP6	220/330 -8 common	10	10	1
RP7	1KΩ -8 common	9	1	—
RP13	4K7 -8 common	9	1	—
RP14	4K7 -8 common	9	1	—

PL5	KEYBOARD	6	SEE CCT	DIAG
PL7	VIDEO	8	SEE CCT	DIAG
PL11	ETHERNET	15	SEE CCT	DIAG
PL12	SCSI	50	—	ODD PINS 1→99
PL13	VME	96	—	

A9, A11, A15, A17
A19, B20, B23, C9



-5V	IC9 PIN 8
	IC32 PIN 4
	IC180 PIN 8
	IC182 PIN 8
VBB	IC11 PIN 24
+12V	PL11 PIN 13



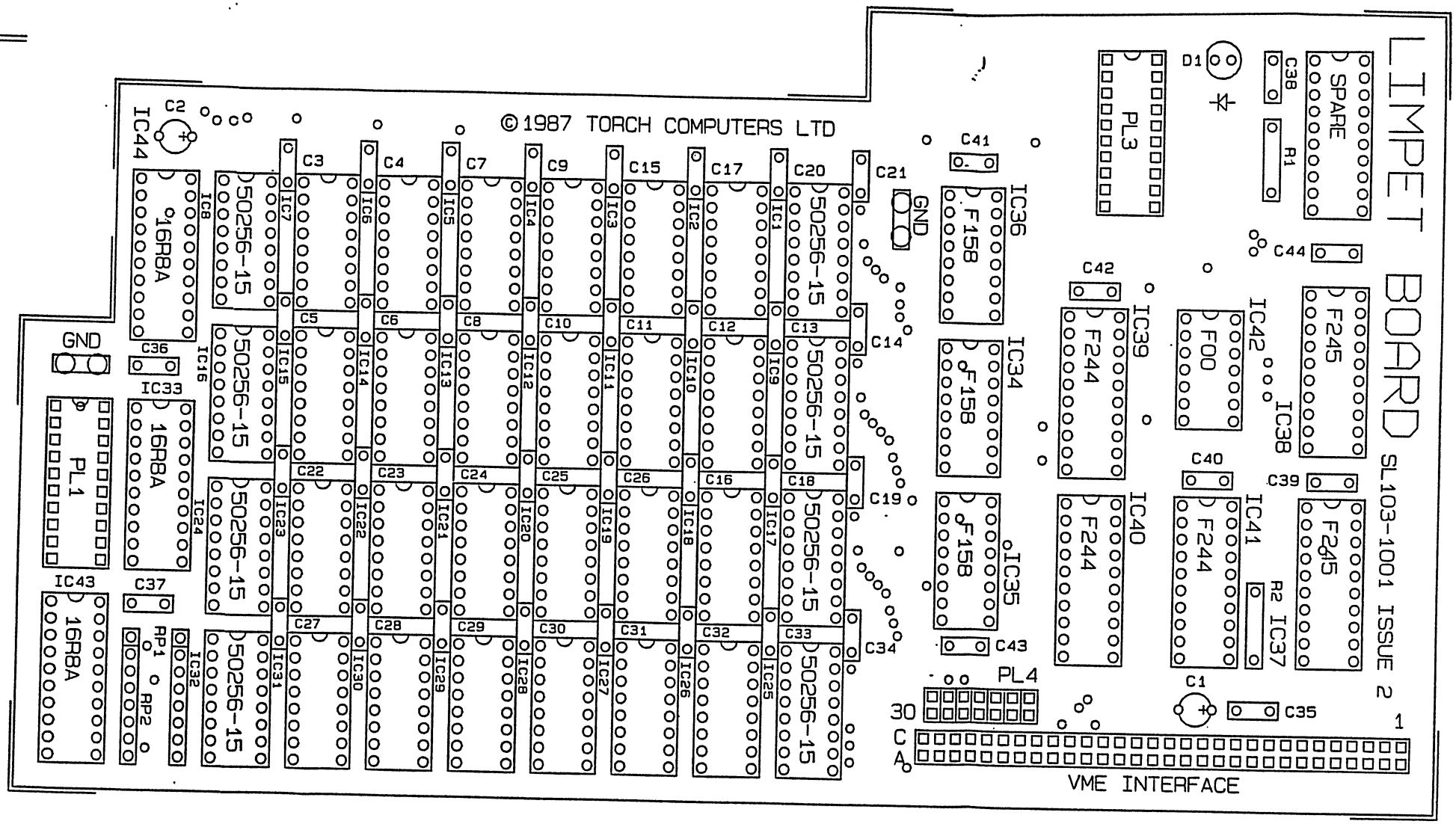
TORCH COMPUTERS

Revision	A	B	C	D	E	F	G	H	T	J	K	L	M	N	O	P	Q	R	S	T
Date	11/10/84	2/11/84	30/11/84	23/12/84	4/1/85	15/1/85	11/2/85	5/3/85	10/5/85	21/8/85	5/9/85	5/9/85	5/9/85	5/9/85						
Initials	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC	GMC						

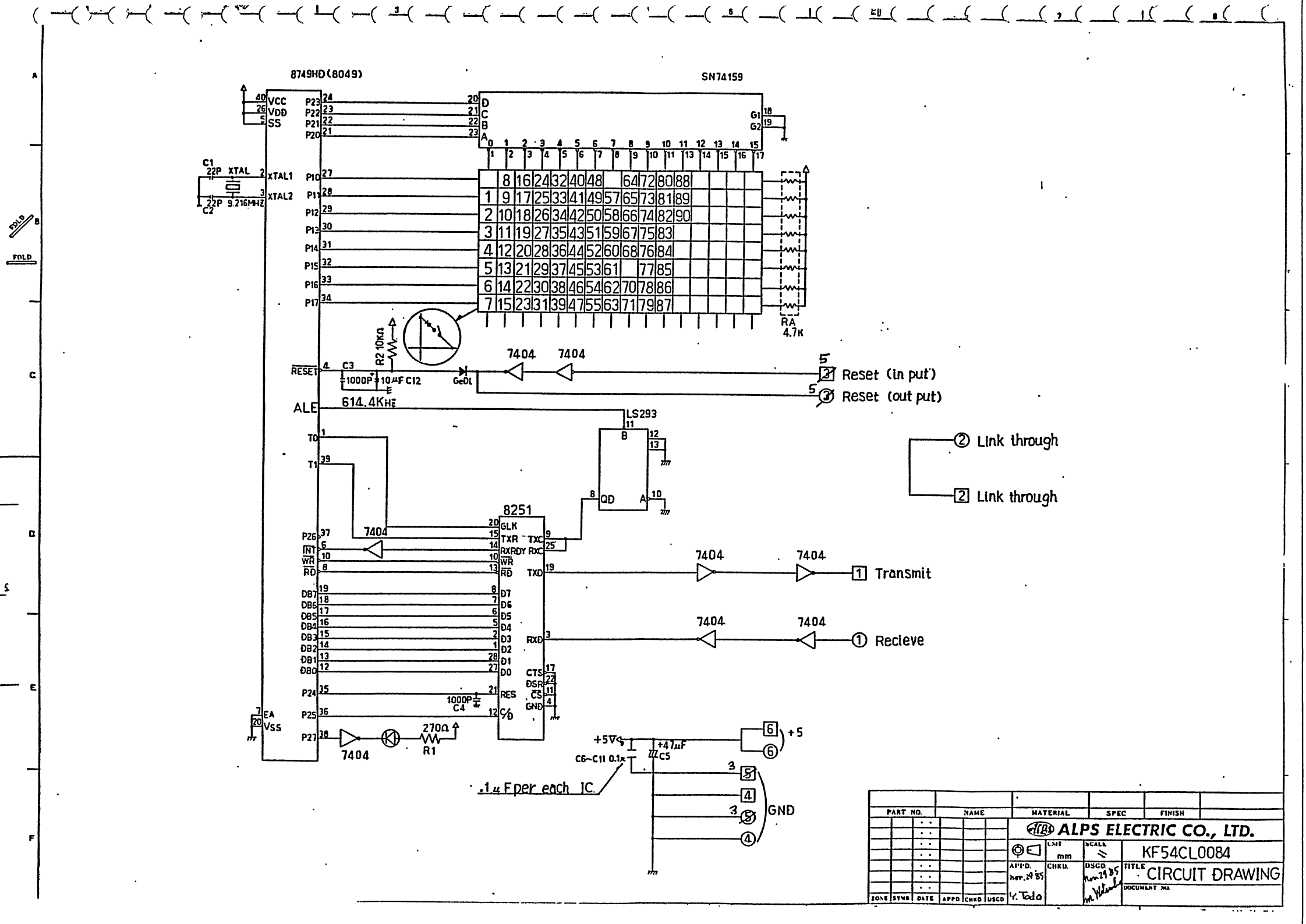
Title: STICKLEBACK BOARD
POWER SUPPLIES

Scale: 1" = 1/2" = 1

Drawing ref.: GMC 111084



TORCH COMPUTERS LTD LIMPET BOARD SL103-1001 ISSUE 2 [CL] COMPONENT LEGEND (SILK SCREEN)


8749HD(8049)
SN74159
VCC
VDD
SS
XTAL1
XTAL2
22P XTAL
22P 9.216MHZ
C1
C2
RESET
C3
1000P
10μF C12
R2 10KΩ
RA 4.7K
7404
7404
Reset (in put)
Reset (out put)
ALE
614.4KHz
LS293
8251
GLK
TXR
RXRDY
TXC
RXC
TXD
RXD
CTS
DSR
CS
GND
RES
C/D
EA
Vss
P24
P25
P26
P27
270Ω
R1
1000P
C4
Link through
Link through
Transmit
Recieve
+5V
+47μF
C5
C6~C11 0.1μ
.1μF per each IC.
+5
GND
PART NO.
NAME
MATERIAL
SPEC
FINISH
ALPS ELECTRIC CO., LTD.
KF54CL0084
CIRCUIT DRAWING
UNIT mm
SCALE
APP'D.
CHK'D.
DSG'D.
DOCUMENT NO.
ZONE
SYMB
DATE
APPD
CHKD
DSGD